

**REMARKS/ARGUMENTS**

Claims 1-5, 7-8, 14-16, 25, 27, 29-30, 36-38, and 47 are currently amended.

Claims 18-19, 26, 40-41, and 48 are cancelled in this Amendment. Claims 9-13, 20-24, 31-35, 42-46 were cancelled in a previous Amendment. Therefore, claims 9-13,  
5 18-24, 26, 31-35, 40-46, and 48 are currently cancelled.

Claims 1-8, 14-17, 25, 27-30, 36-39, and 47 remain pending in the application after entry of this Amendment.

**Rejections under 35 U.S.C. § 112**

10 Claims 15, 26, 37, and 48 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. More specifically, the Office has asserted that the requirement of claims 15, 26, 37, and 48 for choosing an insertion point so at to  
15 yield a "most acceptable integrated circuit timing characteristic" is not supported in the specification. Claims 26 and 48 have been cancelled. Claims 15 and 37, as amended, are fully supported in the specification by the discussion provided in the last paragraph of page 8 and the first partial paragraph of page 9. In view of the present amendments to claims 15 and 37, these rejections are respectfully traversed.

20 Claims 15, 26, 37, and 48 were also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the Office has asserted that the meaning of "acceptable" and "timing characteristic" is not clear and that the specification does not elucidate the issue. Claims 26 and 48 have been cancelled, and  
25 claims 15 and 37 have been amended to no longer recite the terms "acceptable" or "timing characteristic." As previously mentioned, claims 15 and 37, as amended, are fully

supported in the specification by the discussion provided in the last paragraph of page 8 and the first partial paragraph of page 9. In view of the present amendments to claims 15 and 37, these rejections are respectfully traversed.

In view of the foregoing, the Office is requested to withdraw the 35 U.S.C. §112  
5 rejections of claims 15 and 37.

**Rejections under 35 U.S.C. § 102**

Claims 1-8, 14-19, 25-30, 36-41, and 47-48 were rejected under 35 U.S.C.  
§102(b) as being anticipated by Petschauer et al. ("Petschauer") (U.S. Patent No.:  
10 5,596,506). These rejections are respectfully traversed.

The Office has quoted the Abstract of Petschauer as providing a partial basis (in addition to Figures 4-9, 25, and corresponding text) upon which independent claims 1-4 are currently rejected under 35 U.S.C. §102(b). However, the Office has not explained how the quotations from the Abstract of Petschauer teach or suggest the elements and  
15 limitations of independent claims 1-4. The Applicants respectfully submit that the quotations from the Abstract of Petschauer simply do not teach or suggest the elements and limitations of independent claims 1-4. The Applicants further submit that the Office has not provided any explanation as to how the quotations from the Abstract of Petschauer are being interpreted as teaching or suggesting the elements and limitations of  
20 independent claims 1-4.

With respect to claims 1 and 2, as amended, Petschauer does not teach or suggest at least the following elements and limitations:

"examining a noise amplitude versus length of conduction path curve associated with the driver to determine a noise level associated with the total path length of  
25 conductive paths coupled to the driver," and

"examining the noise amplitude versus length of conduction path curve associated with the driver to determine a modified total path length of conductive paths coupled to the driver that corresponds to a modified noise level that is less than the maximum acceptable noise level."

5 With respect to claims 3 and 4, as amended, Petschauer does not teach or suggest at least the following elements and limitations:

"examining a first noise amplitude versus length of conduction path curve associated with the first driver to determine a first noise level associated with the total path length of conductive paths," and

10 "examining a second noise amplitude versus length of conduction path curve associated with a second driver to determine a second noise level associated with the total path length of conductive paths."

The Applicants have thoroughly reviewed Figures 4-9, 25, and corresponding text  
15 of Petschauer, as asserted by the Office, and have determined that the above elements and limitations of claims 1-4 are not present in the teachings of Petschauer. Therefore, the Applicants submit that the language of claims 1-4, at least as recited in the elements and limitations above, *patentably distinguishes* claims 1-4 from Petschauer with respect to anticipation under 35 U.S.C. §102(b).

20 The Office has asserted that the Applicants are merely alleging that Petschauer does not contain the recited limitations. Furthermore, the Office has asserted that the Applicant's arguments do not clearly point out the patentable novelty of the claims in view of the cited art of record. Additionally, the Office has asserted that the Applicants do not show how amendments to the claims avoid the cited art of record. Yet further, the  
25 Office has asserted that the Applicants have not addressed the specifics of the rejections

under 35 U.S.C. §102(b), including the cited passages in the cited art of record. The Applicants respectfully disagree with all of the Office's assertions as stated above.

The Applicants are not merely alleging that Petschauer does not contain the recited limitations of claims 1-4. Rather, the Applicants factually submit that Petschauer (particularly Abstract, Figures 4-9, 25, and corresponding text) does not teach or suggest the elements and limitations of claims 1-4 as identified above.

The Applicants further submit that the Office has not specifically pointed out how Petschauer either expressly or inherently describes the elements and limitations of claims 1-4 as identified above. The passages of Petschauer cited by the Office to provide support for the rejections under 35 U.S.C. §102(b) consists of a blanket reference to the Abstract, eight figures (Figs. 4, 5A, 5B, 6, 7, 8, 9, and 25), and corresponding text (effectively spanning the entire Detailed Description of the Petschauer specification). The Office has not clearly pointed out how the cited art of record teaches each and every element and limitation of a claim as required to support a rejection under 35 U.S.C. §102(b). A blanket referral to multiple figures and corresponding text of a reference, without providing further indication as to how specific elements and limitations of the rejected claims are taught or suggested by the reference, is equivalent to an omnibus rejection. The Office is kindly requested to specifically point out what portions of Petschauer are being asserted to teach each and every element and limitation of claims 1-4. Additionally, the Office is kindly requested to specifically point out how the cited portions of Petschauer teach each and every element and limitation of claims 1-4.

The Applicants submit that Petschauer fails to teach each and every element of each of claims 1-4 as required for a rejection under 35 U.S.C. §102(b). Furthermore, since each of dependent claims 5-8, 14-17, 25, 27-30, 36-39, and 47 ultimately depend from one of independent claims 1-4, each dependent claims is patentable for at least the same reasons as provided for its respective independent claim. Claims 18-19, 26, 40-41, and 48

have been cancelled. In following, the Applicants respectfully request that the Office withdraw the 35 U.S.C. §102(b) rejections of claims 1-8, 14-17, 25, 27-30, 36-39, and 47.

5     **Rejections under 35 U.S.C. § 103**

Claims 1-8, 14-19, 25-30, 36-41, and 47-48 have been rejected under 35 U.S.C. §103(a) as being unpatentable over [Alpert et al. ("Alpert") (U.S. Patent No.: 6,117,182) or Tawada (U.S. Patent No.: 6,405,350 B1)] in view of (Applicant's Own Admission) or Oh et al. ("Oh") or Davis et al. ("Davis") or Yang et al. ("Yang") or Petschauer. These  
10    rejections are traversed.

Claims 1-8, 14-19, 25-30, 36-41, and 47-48 have also been rejected under 35 U.S.C. §103(a) as being unpatentable over [Jones et al. ("Jones") (U.S. Patent No.: 5,666,288) or Dwyer et al. (U.S. Patent No.: 6,341,365 B1)] in view of (Applicant's Own Admission) or Oh or Davis or Yang or Petschauer. These rejections are also traversed.

15       For clarification purposes, the Office has asserted the following combinations of references as a basis for rejecting claims 1-8, 14-19, 25-30, 36-41, and 47-48 under 35 U.S.C. §103(a):

1. Alpert in view of Applicant's Own Admission
2. Alpert in view of Oh
- 20    3. Alpert in view of Davis
4. Alpert in view of Yang
5. Alpert in view of Petschauer
6. Tawada in view of Applicant's Own Admission
7. Tawada in view of Oh
- 25    8. Tawada in view of Davis
9. Tawada in view of Yang

10. Tawada in view of Petschauer

11. Jones in view of Applicant's Own Admission

12. Jones in view of Oh

13. Jones in view of Davis

5 14. Jones in view of Yang

15. Jones in view of Petschauer

16. Dwyer in view of Applicant's Own Admission

17. Dwyer in view of Oh

18. Dwyer in view of Davis

10 19. Dwyer in view of Yang

20. Dwyer in view of Petschauer

Claims 1-4 are independent claims and claims 5-8, 14-19, 25-30, 36-41, and 47-48 are dependent claims which each depend from one of claims 1-4. Since a dependent claim is by definition patentable if its respective independent claim is patentable, the arguments to follow with respect to the rejections under 35 U.S.C. §103(a) are directed toward demonstrating how independent claims 1-4 are patentable over the cited art of record.

The Office has argued that the present invention as recited in each of claims 1-4 would have been obvious to one of ordinary skill in the art at the time of the invention given the teachings of the cited art as combined above. More specifically, the Office has argued that the cited art as combined above teaches two techniques for solving the crosstalk noise problem: 1) increasing the driver strength, and 2) inserting buffers when the conductors are too long. The Office has also stated that the Applicant's arguments are not persuasive because they have not addressed the cited teachings associated with the two techniques for solving the crosstalk noise problem. The Applicants acknowledge the teachings associated with the two techniques for solving the crosstalk noise problem.

However, the two techniques for solving the crosstalk noise problem as identified by the Office is not representative of the present invention, as recited in each of claims 1-4, when considered as a whole.

With respect to claims 1-2, the Office's entire basis of rejection under 35 U.S.C.

5 §103(a) is directed toward the following element:

"modifying the net to reduce the total path length of conductive paths coupled to the driver to be less than or equal to the modified total path length of conductive paths."

With respect to claims 3-4, the Office's entire basis of rejection under 35 U.S.C.

10 §103(a) is directed toward the following element:

"replacing the first driver with the second driver."

In determining the differences between the cited art and the claims, the question under 35 U.S.C. §103 is whether the claimed invention as a whole would have been  
15 obvious. Therefore, the Office must consider all elements and limitations of the claimed invention. Furthermore, all words in a claim must be considered in judging the patentability of that claim against the cited art of record.

The Applicants have thoroughly reviewed the teachings of each combination of references as identified above and have not found any teaching or suggestion of the  
20 following elements and limitations of claims 1-2, particularly when combined with the other elements and limitations of claims 1-2:

"examining a noise amplitude versus length of conduction path curve associated with the driver to determine a noise level associated with the total path length of conductive paths coupled to the driver" and

25 "examining the noise amplitude versus length of conduction path curve associated with the driver to determine a modified total path length of conductive paths

coupled to the driver that corresponds to a modified noise level that is less than the maximum acceptable noise level."

Additionally, the Applicants have thoroughly reviewed the teachings of each combination of references as identified above and have not found any teaching or  
5 suggestion of the following elements and limitations of claims 3-4, particularly when combined with the other elements and limitations of claims 3-4:

"examining a first noise amplitude versus length of conduction path curve associated with the first driver to determine a first noise level associated with the total path length of conductive paths," and

10 "examining a second noise amplitude versus length of conduction path curve associated with a second driver to determine a second noise level associated with the total path length of conductive paths."

The Office has asserted that the Applicant's arguments amount to a general  
15 allegation that the claims define a patentable invention without specifically pointing out how the language of the claims *patentably distinguish* them from the cited art of record. The Applicants disagree with this assertion by the Office. More specifically, none of the multiple combinations of references as identified above in any way teach or suggest the following:

20 Claims 1-2: "examining a noise amplitude versus length of conduction path curve associated with the driver to determine a noise level associated with the total path length of conductive paths coupled to the driver,"

Claims 1-2: "examining the noise amplitude versus length of conduction path curve associated with the driver to determine a modified total path length of  
25 conductive paths coupled to the driver that corresponds to a modified noise level that is less than the maximum acceptable noise level,"



Claims 3-4: "examining a first noise amplitude versus length of conduction path curve associated with the first driver to determine a first noise level associated with the total path length of conductive paths," and

5 Claims 3-4: "examining a second noise amplitude versus length of conduction path curve associated with a second driver to determine a second noise level associated with the total path length of conductive paths."

Additionally, none of the alleged admissions by the Applicants amount to an admission of the elements and limitations of claims 1-4 as identified above. The  
10 *patentable novelty* of the present invention resides in the method that is embodied by the combined elements and limitations in each of claims 1-4.


Respectfully speaking, the Office's argument relating to the two techniques for solving the crosstalk noise problem (i.e., 1) increasing the driver strength, and 2) inserting buffers when the conductors are too long), as taught by the cited art of record, is not  
15 sufficient to establish a prima facie case of obviousness with respect to each of claims 1-4. The Applicants have specifically pointed out to the Office the elements and limitations of claims 1-4 that are not taught or suggested by the cited art of record. Furthermore, the Applicants have pointed out to the Office that the patentability of the present invention relies not only in the elements and limitations that are not taught or suggested by the cited  
20 art of record, but also in the combination of elements and limitations as recited in each of claims 1-4 when considered as a whole.

The Office has stated that the "Applicants have not addressed the specifics of the rejections, including the cited passages in the asserted prior art." The Applicants respectfully disagree with this statement. The Office has provided a summary of the  
25 teachings of each of the following references: Alpert, Tawada, Jones, Dwyer, Oh, Davis, Yang, and Petschauer. However, in correlating the summarized teachings of the cited art

of record to the claims, the Office has only asserted that the two techniques for solving the crosstalk noise, as previously discussed, are taught by the cited art of record. The Office has not identified how the teachings of the cited art of record correspond to the other elements and limitations of the claims, as previously discussed. The Applicants  
5 respectfully submit that the specifics of the rejections have been addressed and that the cited passages in the art of record as applied by the Office are not sufficient to establish prima facie obviousness of the presently claimed invention.

In view of the foregoing, the Applicants kindly request that the Office withdraw the rejections of independent claims 1-4 and dependent claims 5-8, 14-17, 25, 27-30, 36-  
10 39, and 47. Dependent claims 18-19, 26, 40-41, and 48 have been cancelled. The Applicants respectfully submit that all of the pending claims are in condition for allowance. Therefore, a notice of allowance is requested. If the Examiner has any questions concerning the present amendment, the Examiner is kindly requested to contact the undersigned at (408) 749-6903. If any additional fees are due in connection with filing  
15 this amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. SUNMP099). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,  
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